APPENDIX B

Standard Guidance to Format Sample Results, Field Measurements, and Associated Metadata

Standard Guidance to Format Sample Results, Field Measurements, and Associated Metadata

Environmental Protection Agency Region 8

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General Information

This document describes how environmental data must be formatted before it can be submitted to USEPA Region 8's data archive. Data providers are requested to create data tables and save them as ***tab-delimited text files***. Most commonly available software products such as Microsoft Access, Excel, and Lotus 1-2-3 can create tab-delimited files but remember:

I. To **not** to include text delimiters such as quotation marks
II. To **not** include a row of column headings at the beginning of your files
III. To delineate individual fields or columns using a tab
IV. To **not** include tabs anywhere in the actual data that you are formatting

There are two types of metadata tables that must be successfully submitted ***before*** you submit sampling data and field measurements:

1 PROJECTS	Documents the reasons why samples or field measurements were collected
2 LOCATIONS	Describes stations where samples are collected and/or field measurements are made

For ***non-biological*** results, there are two different types of tables that can be submitted:

3 FIELD MEASUREMENTS	Results of measurements or observations made in the field
4 CHEMISTRY	Results of ***non-biological*** samples analyzed in a laboratory

For ***biological*** results, there are three different types of tables that can be submitted:

5 INDIVIDUALS	Physical attributes associated with individual organisms
6 TAXON ABUNDANCE	Census results associated with populations of biological organisms
7 TISSUE	Results of tissue samples analyzed in a laboratory

The following sections list the data fields and format restrictions that are associated with each type of data table. **For more information or to request deviations from these data formats, contact Martin McComb at 303-312-6963 or mccomb.martin@epa.gov.**

1 PROJECTS

This type of table contains data documenting the reasons why samples or field measurements were collected. The columns, order, and specific requirements in this table type are: (required fields are flagged with "R")

	Column Order. Name	Column Definition	Specific Requirements
R	1. Project ID	User defined identifier for a specific data collection effort.	**Free Text:** 8 character limit
R	2. Project Name	A user defined name for a specific data collection effort.	**Free Text:** 60 character limit
R	3. Project Start Date	Date on which a specific data collection effort began.	**Acceptable Format:** MM/DD/YYYY
R	4. Project Duration	Planned duration of a specific data collection effort.	**Free Text:** 15 character limit
R	5. Project Purpose	Reasons why a specific data collection effort was initiated.	**Free Text:** 1999 character limit
	6. Project Contact	Contact information for party responsible for data collection effort.	**Free Text:** 1999 character limit

2 LOCATIONS

This type of table contains data describing stations (both surface points and wells) where samples are collected and/or field measurements are taken. The columns, order, and specific requirements in this table type are: (required fields are flagged with "R")

	Column Order. Name	Column Definition	Specific Requirements	
R	1. Location ID	ID representing a station where a sample is collected or a field measurement is taken.	**Free Text:** 15 character limit	
R	2. Location Name	Name representing the station identified by Location ID.	**Free Text:** 60 character limit	
R	3. Location Primary Type	Primary type of location at which samples are collected and field measurements are made.	**Valid Values:** Canal Cave Channelized stream Combined sewer Constructed Wetland Estuary Facility Gallery Great Lake Lake Land Land runoff Landfill Mine/mine discharge Ocean Reservoir River/Stream Riverine impoundment Spring Storm sewer Waste pit Waste sewer Well Wetland	
R	4. Location Secondary Type	Secondary type of location at which samples are collected and field measurements are made. Use "None" for all Primary Types except Canal, Facility, and Wetland.	**Valid Values:** Drainage Irrigation Transport Industrial Municipal Sewage (POTW) Municipal Water Supply (PWS) Other/combined Privately Owned non-Industrial Estuarine, emergent Estuarine, forested Estuarine, scrub-shrub Lacustrine, emergent Palustrine, emergent Palustrine, forested Palustrine, moss-lichen Palustrine shrub-scrub Riverine, emergent	Canal Canal Canal Facility Facility Facility Facility Facility Wetland Wetland Wetland Wetland Wetland Wetland Wetland Wetland Wetland
R	5. Latitude	Latitude, in decimal degrees, of a well or location where a sample is collected or field measurements are made.	**Format:** ##.########	
R	6. Longitude	Longitude, in decimal degrees, of a station where a sample is collected or field measurements are made.	**Format:** -###.#######	
R	7. Lat/Long Method	Method used to determine the representative Latitude and Longitude coordinates.	**Valid Values:** 007 Address Matching - Other 011 Census – Other 012 GPS Carrier Phase Static Relative Position 013 GPS Carrier Phase Kinematic Relative Pos. 014 GPS Code Differential 015 GPS Code Precise Position	

	Column Order. Name	Column Definition	Specific Requirements
			016 GPS Code Standard Position Off
			017 GPS Code Standard Position On
			028 GPS-Unspecified
			018 Interpolation – Map
			019 Interpolation – Photo
			020 Interpolation – Satellite
			021 Interpolation-Other
			030 Interpolation-Digital Map Source
			022 Loran C
			027 Unknown
R	8. Lat/Long Datum	Datum used to determine the representative Latitude and Longitude coordinates.	**Valid Values:** NAD27 North American Datum of 1927 NAD83 North American Datum of 1983 OTHER Other UNKNOWN Unknown
	9. Lat/Long Scale	Scale of the format used to interpolate the representative Latitude and Longitude coordinates. Required if Lat/Long Method is an interpolation.	**Free Text:** 20 character limit
	10. Elevation	Ground elevation of a station where a sample is taken or field measurements are made.	**Format:** #####.####
	11. Elevation Units	Units of measure for the ground elevation measurement.	**Valid Values:** ft or m
	12. Elevation Method	Method used to determine the elevation of a station where a sample is taken or field measurements are made.	**Valid Values:** 001 GPS Carrier Phase Static Relative Position 002 GPS Carrier Phase Kinematic Relative Pos. 003 GPS Code Differential 004 GPS Code Precise Position 005 GPS Code Standard Position Off 006 GPS Code Standard Position On 007 Classical Surveying Techniques 008 Other 009 Altimetry 014 Topographic Map Interpolation
	13. Elevation Datum	Datum used to determine the elevation of a station where a sample is taken or field measurements are made.	**Valid Values:** NAVD88 North American Datum of 1988 NGVD29 National Geodetic Datum of 1929 WGS84 World Geodetic System of 1984 SEALV Elevation from Mean Sea Level OTHER Other UNKNOWN Unknown
R	14. State	Postal abbreviation of the state in which the station is located.	**Valid Values:** CO MT ND SD UT WY
R	15. County	Name of the county in which the station is located.	**Valid Values:** Refer to Appendix D

3 FIELD MEASUREMENTS

This type of table contains data describing the results of measurements or observations made in the field. The columns, order, and specific requirements in this table type are: (required fields are flagged with "R")

	Column Order. Name	Column Definition	Specific Requirements
R	1. Project ID	ID for a specific data collection effort.	**Free Text:** Must exist in STORET
R	2. Location ID	ID representing a station where a sample is collected or a field measurement is taken.	**Free Text:** Must exist in STORET
R	3. Activity ID	ID that groups together a suite of field measurements that were made at the same date, time, place, and in the same medium.	**Free Text:** 12 character limit
R	4. Medium	Medium in which the field measurements were made.	**Valid Values:** Air Sediment Soil Water
R	5. Date	Date that the field measurements were made.	**Acceptable Format:** MM/DD/YYYY
	6. Time	Time that the field measurements were made.	**Acceptable Format:** HH:MM
	7. Personnel	Name of the person who collected the field measurements.	**Acceptable Format:** LastName (space) FirstName
	8. Depth	Depth from surface to where the field measurements were taken.	**Acceptable Format:** #####.##
	9. Depth Units	Units associated with the depth where the field measurements were taken.	**Valid Values:** ft or m
	10. Activity Comments	Text comments to be associated with a group of field measurements.	**Free Text:** 256 character limit
R	11. Parameter	Name of the characteristic that was measured.	**Valid Values:** Refer to Appendix B
R	12. Result Value	Value that was measured.	**Acceptable Format:** ##########.#####
R	13. Result Value Units	Units associated with the value measured.	**Valid Values:** Refer to Appendix C
	14. Result Type	Type of result that was measured.	**Valid Values:** Actual Calculated Estimated
	15. Result Comment	Comments associated with the measured value.	**Free Text:** 256 character limit

4 CHEMISTRY

This type of table contains data describing the results of results of *non-biological* samples analyzed in a laboratory. The columns, order, and specific requirements in this table type are: (required fields are flagged with "R")

	Column Order. Name	Column Definition	Specific Requirements
R	1. Project ID	ID for a specific data collection effort.	**Free Text:** Must exist in STORET
R	2. Location ID	ID representing a station where a sample is collected or a field measurement is taken.	**Free Text:** Must exist in STORET
R	3. Sample ID	ID that groups together the results of a sample analyzed in a lab.	**Free Text:** 12 character limit
R	4. Sample Category	Category that best describes the kind of sample that was collected and analyzed.	**Valid Values:** Composite w/o Parents Depletion Replicate Field Blank Field Calibration Check Field Equipment Rinsate Blank Field Replicate/Duplicate Field Spike Field Split Field Surrogate Spike Integrated Cross-Sectional Profile Integrated Time Series Integrated Flow Proportioned Integrated Horizontal Profile Integrated Vertical Profile Routine Sample
	5. Replicate Number	Number to distinguish a replicate sample analysis from a primary one. Only valid if Sample Category field is "Field Replicate/Duplicate" or "Depletion Replicate". All replicates should have the same Activity ID as the primary sample.	**Valid Values:** Integers between 01 and 99
R	6. Activity Medium	Medium in which the sample was collected.	**Valid Values:** Air Sediment Soil Water
	7. Sample Matrix	Specific matrix that was analyzed by the lab.	**Valid Values:** Refer to Appendix E
R	8. Activity Date	Date that the sample was collected.	**Acceptable Format:** MM/DD/YYYY
	9. Activity Time	Time that the sample was collected.	**Acceptable Format:** HH:MM
	10. Personnel	Name of the person who collected the sample in the acceptable format.	**Acceptable Format:** LastName FirstName
	11. Depth	Depth from surface to where the sample was collected.	**Acceptable Format:** #####.##
	12. Depth Units	Units associated with the depth from surface to where the sample was collected.	**Valid Values:** ft or m
	13. Upper Depth	Depth from surface to the top of the place where the sample was collected if the sample was collected over a range of depths.	**Acceptable Format:** #####.##
	14. Lower Depth	Depth from surface to the bottom of the place where the sample was collected if the sample was collected over a range of depths.	**Acceptable Format:** #####.##
	15. Depth Range Units	Units associated with the upper and lower depths where a sample was collected.	**Valid Values:** ft or m
	16. Sample Comments	Text comments to be associated with a sample.	**Free Text:** 256 character limit
R	17. Parameter	Name of the characteristic that was measured.	**Valid Values:** Refer to Appendix B
R	18. Sample Fraction	Fraction of the sample that was analyzed to obtain a Result Value.	**Valid Values:** Total Dissolved Suspended Settleable Non-settleable Filterable Non-filterable Volatile Non-volatile Acid Soluble Vapor Supernate Fixed Total Recovrble
R	19. Result Value	Value that was measured.	**Acceptable Format:** ##########.##### **Valid Values:** *Non-detect *Present >QL *Present <QL *Present
R	20. Result Value Units	Units associated with the value measured.	**Valid Values:** Refer to Appendix
	21. Result Type	Type of result that was measured.	**Valid Values:** Actual Calculated Estimated
	22. Result Comment	Comments associated with the measured value.	**Free Text:** 256 character limit
	23. Detection Limit	Detection limit to be associated with the result of a sample analysis.	**Free Text:** 8 character limit
	24. Detection Limit Units	Units of measure associated with the detection limit that is being reported.	**Valid Values:** Refer to Appendix C
	25. Detection Limit Comment	A description of the type of detection limit that is being reported.	**Free Text:** 254 character limit
R	26. Analytical Procedure	The lab analytical procedure that was used to obtain a result from a sample.	**Valid Values:** Refer to Appendix A
R	27. Analytical Procedure Source	The source of the lab analytical procedure.	**Valid Values:** Refer to Appendix A
	28. Analysis Date	Date that the sample was analyzed.	**Acceptable Format:** MM/DD/YYYY
	29. Analysis Time	Time that the sample was analyzed.	**Acceptable Format:** HH:MM